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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,410	08/09/2000	Ruben Meraz	500488.091556	5719

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EXAMINER	
MICHALSKI, JUSTIN I	
ART UNIT	**PAPER NUMBER**
2644	

DATE MAILED: 07/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/634,410	MERAZ, RUBEN	
	Examiner	Art Unit	
	Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/09/2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *10,11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) sub,
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 5 objected to because of the following informalities: "...passes through a slot a surface..." is unclear. The office suggests --passes through a slot in a surface--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoda et al. (US Patent 5,177,801) in view of Aksyuk et al. (US Patent 6,173,105).

Regarding Claim 1, Shoda et al. discloses a cross fader (Fig. 3). The output of the cross fader is a mixed signal of signal PGM and signal PST dependent as a function of position of operational knob 122. As shown in Fig 4, the fader fades out the audio signal of PGM channel according to curve F_{OUT} when the operational knob 122 is moved from the upper end (first position) to the lower end (second position) while fading in the signal of present channel PST according to curve F_{IN} (Column 1, lines 39-46). Shoda et al. thereby discloses the range of travel of knob 122 whereby at upper end

(first position) first signal PST is attenuated and wherein at lower end in range of travel (second position) second signal PGM is attenuated. Shoda et al. does not disclose the use of optocouplers or shutters as means of attenuation. Aksyuk et al. discloses an optical component (Fig. 4) that includes first and second optical waveguides for transmitting and receiving a signal. The waveguides positioned end to end are spaced apart to define a small space between ends through which a signal is optically communicated (i.e. optocoupler). Aksyuk et al. also discloses a movable shutter (shutter 14) element positioned so that the shutter may be interposed in controlled amounts into the gap to vary the amount of optical signal that traverses the gap (i.e. attenuate) (Column 2, lines 10-13). It is known in the art that the advantages of a shutter and light beam arrangement (i.e. optocoupler) can be to overcome mechanically-based problems such as noise produced and wear problems caused by rubbing of a lever's wiper arm within a linear potentiometer. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include optocouplers for transmitting signals in order to obtain a noise free signal and longer lasting device.

Regarding Claim 2, Aksyuk et al. further discloses a shutter (Fig 4, reference 14) being a blade shutter as it can be placed into the gap between waveguides in varied amounts (Column 2, lines 10-13).

Regarding Claim 3, Shoda et al. further discloses when operation knob 122 is moved from the upper end (first end of range of travel) to the lower end (second end of range of travel) audio signal is faded (Column 1, lines 39-46).

4. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shoda et al. and Aksyuk et al. as applied to claims 1-3 above, and further in view of Blackington (US Patent 4,376,566).

Regarding Claim 4, the combination of Shoda et al. and Aksyuk et al. make obvious all elements of claim 3. Shoda et al. and Aksyuk do not disclose the use of C-shaped optocouplers. Blackington discloses a fiber optic shutter cavity through which an optical signal passes through (Fig. 4) (i.e. optocoupler). Figures 4 and 5 illustrate the shape of the cavity is C-shaped by the long sides of cavity 32a combined with the bottom of cavity 32a. Blackington discloses an upper plate (frame 21) that rests on top of C-shaped cavity (block 32) to stop the shutter from moving down. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use C-shaped optocouplers with a mouth which blade shutter enters in order to prevent the blade from moving further and to attenuate the optical signal.

Regarding Claim 5, the combination of Shoda et al., Aksyuk et al, and Blackington make obvious all elements of Claim 4. The combination of Shoda et al., Aksyuk et al, and Blackington do not disclose a blade shutter being responsive to a stem which passes through a slot and affixed to a knob. It is known in the audio art that the moveable fixture within a fader such as a wiper arm or blade shutter is connected to a stem or body which passes through a slot and is affixed to a knob. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to include a stem which passes through a slot and affixed to a knob in order to control the mechanical input to the cross fader.

Regarding Claim 6, it is known in the audio art that guide rods are used within faders to support and constrain movements of control knob movement. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include guide rods to constraining its movements to the direction of travel.

Regarding Claim 7, it is known in the audio art that guide rods pass through a support or body which is connected to the moveable internal member of a fader. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a support structure on which blade shutter is mounted including apertures through which guide rods pass.

Regarding Claim 8, it is known in the audio art that a knob is moved linearly along a path defined by a slot in order to move the internal member of a fader. Therefore it would have been obvious to one or ordinary skill in the art at the time the invention was made to have knob move linearly along path defined by slot in order to move blade shutter along said range of travel.

Regarding Claim 9, it is known in the audio art that there is a position in the range of travel of crossfader control knobs wherein all signals have the same level output. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a range where blade shutter is free from insertion into first and second space to allow both signals to have the same level output.

Allowable Subject Matter

5. Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yagi (US Patent 5,825,279) Yagi discloses a slide potentiometer structure with stem through slot, guide rods through support body, and linear movement along slot.

Okuya et al. (US Patent 4,426,634) Okuya et al. Discloses a variable resistance device with stem through slot, guide rods, and linear movement along slot.

Okuya (US Patent 4,172,248) Okuya discloses a variable resistor with stem through slot, guide rods through support body, and linear movement along slot.

Van Benthuysen (US Patent 4,101,864) Van Benthuysen discloses a variable resistance slide control with stem through slot, guide rods through support body, and linear movement along slot.

Breitbarth (US Patent 5,986,584) Breitbarth discloses an optical encoder based fader design with stem through slot, guide rods through support body, and linear movement along slot.

Shoda et al. (US Patent 5,177,801) discloses illustration of fade-in fade-out operation performed by crossfader.

Bateman et al. (US Patent 4,947,440) discloses graphic illustration of crossfader operation.

Yochum et al. (US Patent 4,429,219) discloses the disadvantages of mechanical faders and advantage of optical faders.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JM
July 25, 2003

XU MEI
PRIMARY EXAMINER